

Introduction to the 8th Edition of the Massachusetts State Building Code

On February 6, 2011, the 8th Edition of the Massachusetts State Building Code 780CMR (MSBC) goes into full effect. All permit applications submitted after that date shall meet the requirements of the new code. This guide is meant as an overview to assist in the permitting process as required by the new codes, and familiarize one with some of the new code requirements. Please note that there have been significant changes in the requirements for work on existing buildings.

The 8th edition of the Base Code for Massachusetts is comprised of the International Building Code 2009 (IBC), the International Existing Building Code 2009 (IEBC), the International Energy Conservation Code 2009 (IECC), the International Mechanical Code 2009 (IMC), and a separate package of Massachusetts amendments to chapters of the IBC, IEBC and IECC [The Stretch Energy Code]]. The International Codes are sold by the International Code Council and the Massachusetts amendments are sold by the State House Bookstore. Both documents are needed to properly use and work under this code.

Users of the new code must first consult the IBC or IEBC for requirements and then check the Massachusetts Amendments to ensure that no changes have been made to any particular section.

It is recommended that users make a notation of all amended sections directly into their copy of the IBC. This is very helpful in quickly identifying when the base code has been amended and where any requirements might be found.

SCOPE

The IBC (with the IEBC) is the applicable building code for ALL buildings in the Commonwealth of Massachusetts, except 1&2 family dwellings (which are regulated under separate chapters of the MSBC). Please note that residential condominium buildings of 3 units or more are regulated under the IBC (a single condominium unit is **not** a one-family dwelling).

PERMIT APPLICATION

The application must be filled out COMPLETELY. No exceptions.

Incomplete applications will not be accepted for review. Applications shall be submitted to the Building Inspector for the appropriate district. Applications are not to be dropped off or mailed in (unless specifically instructed).

Supply the name and contact information of the building owner, contractor, and architect or engineer (registered design professional). Please note that unless the building owner is a licensed contractor or RDP that person is not eligible to apply for the permit. Please note that the Building Owner is required to sign the application where indicated on page 3.

Confirm the Type of Work. The IEBC requirements are based on Levels of Work and Work Area, which is an entirely new concept to Massachusetts' existing buildings. As the Level of Work increases, so do the requirements for fire protection and structural work increase. Level 2 Work involves any reconfiguration of space, however small the change may be.

The levels of work can be simply defined as follows (Chapter 4 IEBC):

New Construction – a new building.

Addition – any change in footprint or volume of building.

Change of Use – a change in the purpose or level of activity within a building that involves a change in the requirements of this code. Generally, a change in the IBC Chap 3 Use Group definition.

Repair – the patching, restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good and sound condition with respect to loads or performance requirements. Repair of structural members shall comply with the code for new construction.

Alterations Level 1 – includes the removal and replacement, or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose.

As under the 7th Ed., all new work shall comply with all current codes. Changes in gravity loads on buildings of greater than 5% require structural engineering analysis. The replacement of rooftop equipment requires structural engineering analysis.

Alterations Level 2 – includes the reconfiguration of space (new or moved partition walls), the addition or elimination of any doors or windows, the reconfiguration or extension of any system (i.e., mechanical systems), or the installation of any additional equipment (such as new rooftop equipment). Changes in gravity loads of greater than 5% or lateral loads of greater than 10% require a structural engineering analysis.

Alterations Level 3 – Where the work area exceeds 50% of the aggregate of the building and where required by change of use classification including requirements of Levels 1 and 2.

Roof – Replacement of roof covering. This would also be classified as Level 1 work. **Please Note:**

- 1. A roof replacement (with exposed decking or sheathing) can trigger requirements of IECC 101.4.3 #4 (amended) which may require the roof to be insulated to current code values.**
- 2. As Cambridge has a basic wind speed of 105mph or greater, extensive roof replacement may trigger an engineering analysis of roof diaphragms and connections that are part of the wind-resisting system, including wind uplift (Section 606.3.2 IEBC with MA amendments). An engineering report may be required for these roof replacement projects.**

Please indicate the current use of the building or proposed use if different, the construction type of the building (as defined in Chapter 6 IBC), and the current level of fire protection in the building.

The MSBC requires a description of the building in which the proposed work will take place. The application requires only a simple description. (Example: “wood frame building, 3 story, retail on ground floor, residential above” or “brick building, 4 story, offices”).

As part of the construction documents submitted with this Application, a more comprehensive Building Evaluation Report, as required by MSBC Ch 34 Section 101.5.4.0 Amended, shall be included. (IEBC requires that as a condition of the issuance of a building permit the building owner shall cause the existing building (or portion thereof) to be investigated and evaluated in accordance with the provisions of the IEBC. This may include, but not be limited to: evaluation of design gravity loads, lateral load capacity, egress capacity, fire protection systems, fire resistive construction, interior environment, hazardous materials, and energy conservation. The investigation and evaluation shall be in sufficient detail to ascertain the effects of the proposed work on the work area under consideration and, the entire building or structure and its foundation if impacted by the proposed work. The results of the investigation and evaluation, along with any proposed compliance alternatives, shall be submitted to the building official in written report form.)

Provide a description of the proposed scope of work, including a brief description of any changes to structural elements, egress, fire protection, energy conservation, lighting or ventilation systems. Include any changes requiring Zoning approval as required on Pg. 2. As above, a detailed description shall be included in the Building Evaluation Report. (Example: “no structural work, egress door being moved, new alarm devices, new lighting, relocation of front door”).

Provide the estimated cost of proposed work. The cost shall include ALL associated costs, excepting the cost of the permit itself. Please provide a signed copy of the contract or a signed letter of intent (including the job cost) to confirm the construction costs. The current permit fee is \$15/1000 value of work (rounded up). A Final Cost affidavit will be required at the end of all projects (this affidavit is required for final signoff).

The Zoning Information section must be completed for any proposed work that is regulated by the Cambridge Zoning Ordinance.

Please note that almost all work performed on the exterior of a building, including new windows, doors, or skylights is regulated by Zoning. Please read the selections carefully and check an applicable box, if required. The Permit Application must include all documents referenced by applicable selection.

Please note that applications for work which has been approved by the Board of Zoning Appeals must also include all construction drawings as required below. Any information presented to the BZA is separate from the Building Permit Application and cannot be cross-referenced.

Please be specific when describing the use of the space or building. Under zoning definitions, a doctor's office is different from a business office and a bookstore is different from a grocery store. Different uses may have different requirements, including different parking requirements, which can be critical to the project's approval.

To determine the Zone the building may be in, please reference the Cambridge Zoning map as posted in the corridor outside ISD.

Applications for work approved by the Planning Board must include a completed Planning Board Application for a Building Permit (information available at the Community Development Office, 344 Broadway).

Massachusetts has kept the requirements of Construction Control – Section 107.6 MSBC (amended). This section requires the services of a Registered Design Professional (RDP), an architect or engineer. These professional services are required for all projects in buildings that exceed 35,000 ft². (Please note this requirement is based on the size of the building, not the size of the project.) An affidavit from the RDP as regards to the requirements of 107.6 is required to be submitted with the permit application, as well as a compliance report as outlined in Chapter 17. All construction documents prepared for such controlled projects are required to bear the stamp and signature of the RDP.

Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of the MSBC. Construction documents shall be dimensioned and drawn upon suitable material. (Section 107.2 IBC)

All applications shall include construction drawings including, but not be limited to:

- Floor plans (both existing condition and proposed condition)
- Wall Type section drawings
- Fire Protection drawings - required (Sec 107.2.2)
- Means of Egress/Exit Plan drawings - required (sec 107.2.3)
- Exterior Wall Envelope drawings – required (Sec 107.2.4)
- Site Plan – required (Sec 107.2.5, may be waived by Building Official)

The Building Inspector may request further drawings and/or documents other than are listed above in order to determine compliance with the MSBC.

Structures of unusual complexity require Structural Peer Review.

Any proposed work which includes work regulated under MSBC Chap 9 Fire Protection Systems (or Chapter 4 or the Chapter 34 IEBC if applicable) requires review and approval by the Cambridge Fire Department. Such approval shall be gathered by the applicant before the application is submitted to the Building Official. The application shall include the Fire Protection Narrative Report as described in MSBC Sec 902.1 #1a (amended).

Cambridge has adopted the Stretch Energy Code, MSBC 115AA, a more restrictive set of requirements in addition to the International Energy Conservation Code. The application package must include the separate compliance form, either, for a commercial building or for low-rise residential construction. For further information on the Massachusetts Stretch Energy Code, see the Department of Public Safety/Board of Building Regulations website www.mass.gov/dps

If choosing one of the prescriptive compliance paths (table below or cavity filled to R3.5/inch) for renovation work, a description of the insulation products being used shall be included in the application package (part of the Stretch Code Compliance form).

IECC 2009 Table 402.1.1 Insulation and Fenestration Requirements by Component for Residential Construction

Fenestration	Skylight	Ceiling	Walls	Mass Wall	Floor	Basement	Slab	Crawl Space
U-value ⁵	U-value ⁵	R-value	R-value	R-value	R-value	Wall R-value	R-value/Depth	Wall R-value
.30	.55	38	20 or 13+5 ¹	13/17 ²	30 ³	10/13 ⁴	10, 2 feet	10/13 ⁴

1 - R-13 cavity insulation plus R-5 insulated sheathing

2 - Second R-value applies when more than half the insulation is on the interior of the mass wall.

3 - Or insulation sufficient to fill the cavity, R-19 minimum.

4 - R-10 for continuous insulated sheathing or R-13 cavity insulation at the interior of basement wall.

5 - Per Energy Star program requirements for Residential Doors, Windows, and Skylights – Version 5.

New low-rise residential construction (3 stories or less) is required to comply with a HERS (Home Energy Rating System) Index Rating. The rating report is required to be submitted with the application. A partial list of HERS rating companies is available upon request. This office makes no claims on any of the companies listed.

For any change in a lighting array, a Lighting Allowance calculation shall be included with the application.

All information on the Licensed Construction Supervisor shall be supplied. The license holder must possess either a current unrestricted Mass Supervisors License, or a Cambridge Builders License appropriate to the type of construction. The LCS must sign the application. The HIC registration is required for 3 or 4 family owner occupied structures, but is not sufficient, in itself, to apply for a permit.

As the City of Cambridge has had a Contractor's License program in effect previous to any State license programs, Cambridge does require a Licensed Contractor on all projects.

All information on the building owner shall be supplied. The owner of the building, or their representative (not the contractor) must sign the application.

Massachusetts General Law requires proof of Worker's Compensation Insurance. A certificate of insurance shall be supplied.

Massachusetts General Law requires all construction debris be properly disposed. Cambridge requires a Dumpster Permit if a roll-off container is going to be used anywhere on site. This permit must be obtained before issuance of a Building Permit.

This form is for informational purposes only and is not a substitute for the IBC, IEBC, IECC, or the MSBC.